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# *Acanthosyris annonagustata* (Santalaceae), a New Species from Eastern Ecuador

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**ABSTRACT.** A new species, *Acanthosyris annonagustata* C. Ulloa & P. Jørgensen, from Napo, Ecuador, is described and illustrated. This species is characterized by its golden brown puberulent inflorescence and fruit. The plant is used in local medicine, and the fruits taste like *Annona* and are eaten by monkeys. In Ecuador, *Acanthosyris* is also represented by *A. glabrata* (Stapf) Stauffer from the dry western forests, a tree that we are also reporting for the first time from Peru.

**RESUMEN.** Se describe e ilustra la nueva especie *Acanthosyris annonagustata* C. Ulloa & P. Jørgensen (Santalaceae) de la provincia de Napo, Ecuador, que se caracteriza por tener las inflorescencias y frutos pardo-dorado puberulentos. La planta es medicinal, los frutos tienen sabor a *Annona* y son comidos por monos. En el Ecuador *Acanthosyris* también está representado por *A. glabrata* (Stapf) Stauffer, un árbol de los bosques secos occidentales que además se cita por primera vez para Perú.

The genus *Acanthosyris* (Martius & Eichler) Grisebach in Ecuador was known only from the type collection of *Acanthosyris glabrata* (Stapf) Stauffer made by Baron von Eggers at "Hacienda El Recreo," province of Manabí in 1893. The "Hacienda El Recreo" is the type locality of several species, located north of the town of Bahía de Caráquez, between San Vicente and Canoas, and in 1977 only an abandoned house was left by the beach (H. H. Iltis, pers. comm.). A century after the publication of this species in the genus *Cervantesia* Ruiz & Pavón, we saw the isotype at the U.S. National Herbarium and could therefore identify several recent collections from Ecuador and northern Peru, most of this material being misidentified as *Ximenia* (Olacaceae). *Acanthosyris glabrata* is also known from two Peruvian collections, *Lao 5153* (MO) and *Vargas 9* (F, MO) from the department of Tumbes. During preparation of the Santalaceae for the *Flora of Ecuador*, we have studied specimens from Guayas, Manabí, and Loja provinces. *Acanthosyris glabrata* is also known from the department of Atlántico in northern Colombia. This

species grows in dry forests from near sea level to 500 m elevation. Nee (1996) published a key of the woody Santalaceae for South America and described *A. asipapote* M. Nee from Santa Cruz, Bolivia. Recent collections of an edible tree from the Amazonian province of Napo, Ecuador, have revealed a new species of *Acanthosyris*, making six the total number of species presently known in the genus. *Acanthosyris* is a South American genus of more or less spiny shrubs and trees, with edible, drupaceous fruits, distributed from Colombia to northern Argentina, Uruguay, Paraguay, and Brazil. In Ecuador it is represented by two species, which can be separated by the following key:

- 1a. Fruit ca. 2 cm long, glabrous, smooth; flowers whitish gray velutinous, rachis whitish gray villos; leaves ovate; young leaves sparsely villose on the midrib and petiole below; old twigs with exfoliating bark; Pacific dry forest . . . . . *A. glabrata*
- 1b. Fruit 2.9–4 cm long, densely puberulent, rugulose; flowers and rachis golden brown puberulent; leaves elliptic; young leaves glabrous or rarely with a few minute hairs on the midrib and petiole below; old twigs with striate bark; Amazonian rainforest . . . . . *A. annonagustata*

***Acanthosyris annonagustata*** C. Ulloa & P. Jørgensen, sp. nov. TYPE: Ecuador. Napo: Parque Nacional Yasuní, carretera y oleoducto de Maxus en construcción, km 20, 250 m, 28–30 July 1993 (fr), M. Aulestia & G. Grefa 232 (holotype, QCNE; isotypes, AAU, GB, MO, US). Figure 1.

Arbores 30 m altae, spinosae. Folia elliptica, 5–15 cm longa, 2.1–6.8 cm lata, glabra, petiolis 4–9 mm longis. Inflorescentia spicata 2.1–6.8 cm longa. Flores extus trichomatibus fulvis dense puberuli, tepalis 5(6), 2.0–2.5 mm longis, staminibus 5(6), nectario 5(6)-lobato, lobis 1.5–1.8 mm longis. Fructus drupaceus, 2.9–4 cm longus, trichomatibus fulvis dense puberulus.

Tree to 30 m tall, 30–45 cm diam.; old branches with light brown or whitish gray, thinly striate bark, spiny; twigs drying dark brown, finely striate, and angulate, spiny; spines one or two per leafy twig, 4–10.1 mm long, axillary to a leaf and subtending an axillary bud. Leaf blades elliptic, 5–15 × 2.1–6.8 cm, acute to acuminate at apex, acute to atten-

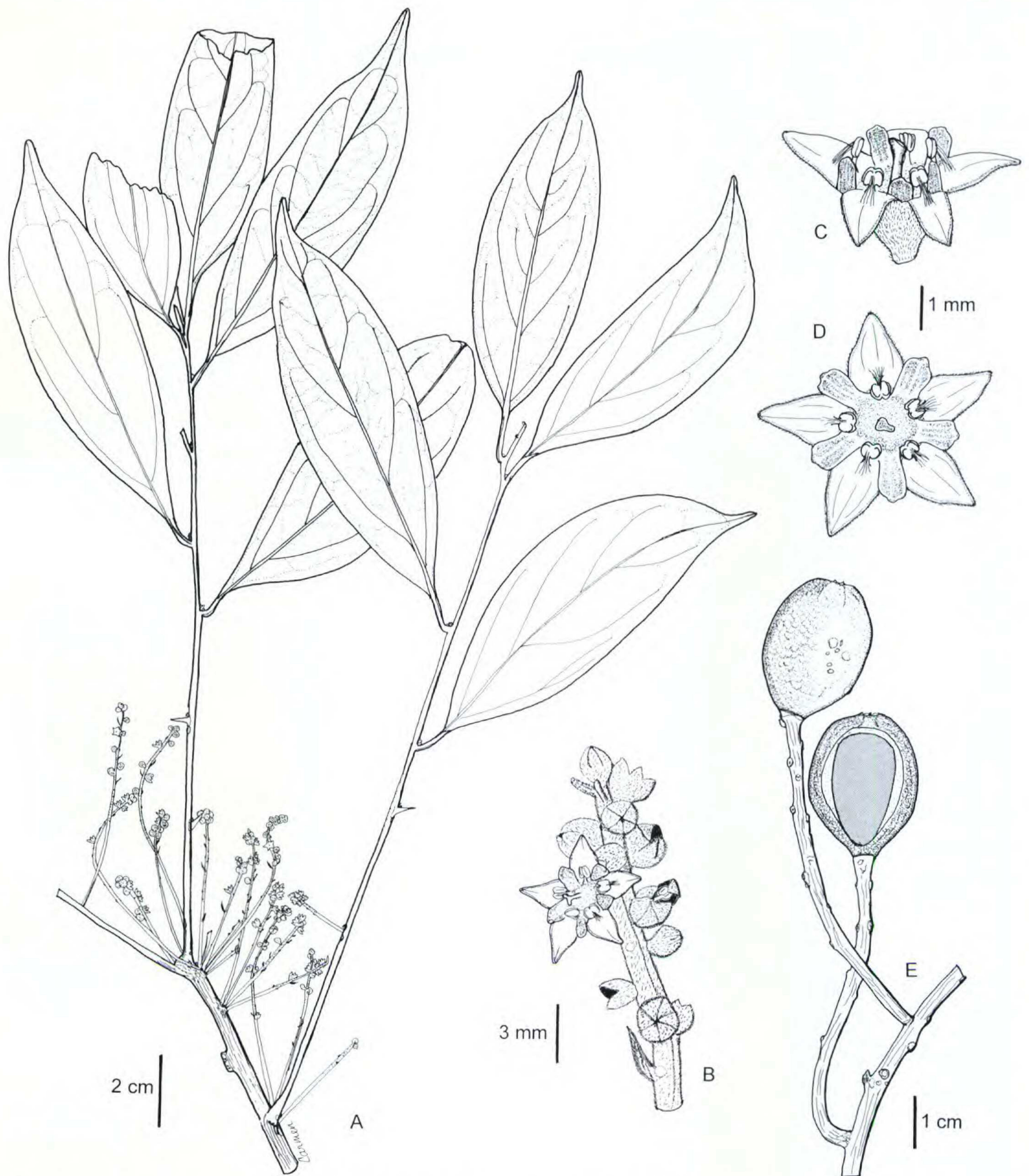


Figure 1. *Acanthosyris annonagustata* C. Ulloa & P. Jørgensen. —A. Habit, flowering branch. —B. Apical portion of inflorescence. —C. Open bud. —D. Open flower. —E. Fruits, with longitudinal section. (A–D, based on *Aulestia et al.* 1318; E, based on *Aulestia & Greff* 232 and *Dik* 522.)

uate and slightly decurrent at base, margin flat to slightly revolute, papery when young, chartaceous when mature, glabrous with a few scattered hairs on the midnerve and petiole when young, soon glabrescent, above drying brown or olive, lustrous, below dull, midnerve impressed or flat above, raised and rounded below, secondary lateral nerves 4–7 per side, raised on both surfaces, tertiary venation reticulate, visible on both surfaces; petiole 4–9 mm

long, flat to slightly canaliculate above, rounded below. Several spikes generally clustered at the base of young branches, or 1 or 2 below the leaves, 2.1–6.8 cm long, rachis densely golden brown puberulent in the upper half, glabrescent, dark brown and lustrous toward the base, 14–24-flowered, bracteate; bracts 1.5–2.5 mm long, sparsely to densely puberulent. Flowers campanulate, greenish cream, 5–7 mm diam., densely covered with minute golden

brown hairs on the outside; the tepal lobes 5(6), triangular, 2.0–2.5 mm long, glabrous within except for a central tuft of long hairs with sticky tips that adhere to the adaxial side of the stamens; stamens 5(6), opposite the tepals, 1.3–1.5 mm long, inserted near the base of the tepals, filaments flat, tapered toward the anther; nectary with 5(6) oblong lobes alternating with the tepals, 1.5–1.8 mm long, minutely puberulent; style 1.2–1.8 mm long, stigma trilobed. Infructescence rachis to  $8.5 \times 0.4$  cm, glabrescent, striate; fruit drupaceous, obovoid to ellipsoid,  $2.9\text{--}4 \times 2.2\text{--}2.8$  cm, yellow or orange-yellow, crowned by the remains of the tepals, nectary and style, which form a depressed scar ca. 3 mm diam., the exocarp woody, 3–4 mm thick, the outer surface minutely granulate, densely covered with golden brown hairs ca. 0.25 mm long, mesocarp white or light orange; seed single, obovoid, to  $3.2 \times 1.6\text{--}1.8$  cm.

*Etymology, common names, and uses.* According to *Dik 522* the fruit is very sweet with a taste of “Guanábana” (*Annona muricata* L.), hence the name of this new species. The Huaorani Amerindians call it “Aguencatue” (*Aulestia* & *Gonti* 2053) or “Oreclamohue” (*Aulestia et al.* 1318) and prepare a tea to eliminate intestinal worms (*Aulestia et al.* 1318).

*Distribution, habitat, and dispersal.* This species has been collected in eastern Ecuador along a road opened by an oil company in the Amazon rainforest at the Yasuní National Park and Huaorani Ethnic Reserve, Napo province, at ca. 250 m elevation. Material in flower has been collected in December and in fruit in March, July, September, and December. This new species is common in the area where spider (*Ateles*) and woolly (*Lagothrix*) monkeys feed on the fruits and presumably are the principal seed dispersal agent (D. Neill, pers. comm.). According to Dawson (1944), fruits of the Argentinian species of *Acanthosyris* are eaten by mammals and birds, but seed dispersal has not been verified. Fruits of *A. glabrata* are relished by agouti (*Dasyprocta*) (Smith, 1950), and the fruits of *A. asipapote* are generally eaten by wild animals (Nee, 1996). As this new species has been reported having a tasty fruit, presumably other large Amazonian frugivores consume and disperse it. Galo Tipaz, an Ecuadorian botanist, and his assistants germinated seeds as part of the revegetation of the Maxus pipeline road, and the plants were established in the revegetated areas of that road, where at least some of them survived (D. Neill, pers. comm.). There is

no documentation of hemiparasitism in this species, although it is probably a root hemiparasite, as are other species in the genus (Barroso, 1968) and the family (see Kuijt, 1969).

*Acanthosyris annonagustata* is characterized by its elliptic leaves and golden brown puberulent inflorescence and fruits. It is the only species that has pubescent fruits when mature. These are of medium size in the genus: *A. asipapote* and *A. paulo-alvinii* G. M. Barroso from Brazil have fruits almost twice as large, while the other species have fruits generally less than 2.5 cm long. The inflorescence and flowers are similar to those of *A. glabrata* and *A. asipapote*, but the indument of the rachis, bracts, and flowers is golden brown in the new species, versus whitish gray in *A. glabrata*, and ferruginous (bracts) and pale (rachis and flowers) on *A. asipapote*. Furthermore, some of the flowers of *A. annonagustata* have six tepals, stamens, and nectary lobes, while only five have been reported for the other species in the genus. The leaves are elliptic in *A. annonagustata*, as in *A. paulo-alvinii*. This is the only species in the genus that grows in tropical rainforest and has fruits known to be eaten by monkeys.

*Paratypes.* ECUADOR. **Napo:** Parque Nacional Yasuní, carretera y oleoducto de Maxus en construcción km 40, Parcela permanente No.10, 235 m, 10 Dec. 1994 (fr), *M. Aulestia* 2987 (QCNE); km 46, 244 m, 17 Sep. 1993 (fr), *A. Dik 522* (COL, F, MO, QCNE, USM); km 10–12, 250 m, 10 July 1993 (fr), *G. Tipaz 2724* (QCNE); Reserva étnica Huaorani, carretera y oleoducto de Maxus en construcción km 67–69, 250 m, 1–3 Dec. 1993 (fl), *M. Aulestia, N. Andi & E. Nenquerei 1318* (AAU, COL, GB, MO, QCA, QCNE, US, USM); km 92–96, 250 m, 20 Mar. 1994 (fr), *M. Aulestia & O. Gonti 2053* (LPB, MO, NY, QCA, QCNE, S).

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